



February 1, 2010

Dockets Unit  
California Energy Commission  
1516 Ninth Street, MS 4  
Sacramento, CA 95814

**DOCKET**  
**08-AFC-8**

DATE FEB 01 2010

RECD. FEB 02 2010

RE: Hydrogen Energy California Project  
Application for Certification 08-AFC-8

On behalf of Hydrogen Energy International LLC, the applicant for the above-referenced Hydrogen Energy California AFC, we are pleased to submit the enclosed document:

- One print copy of the Responses to CEC Data Requests Set Two (Nos. 133 through 152)

The enclosed document is being submitted to the CEC for docketing.

URS Corporation

Dale Shileikis  
Vice President, Environmental Services

Enclosures

CC: Rod Jones (with 15 print copies and one CD)

# Responses to CEC Data Requests Set Two (Nos. 133 through 152)

## Revised Application for Certification (08-AFC-8) for HYDROGEN ENERGY CALIFORNIA Kern County, California

### Prepared for:

Hydrogen Energy International  
LLC



hydrogen energy

### Submitted to:

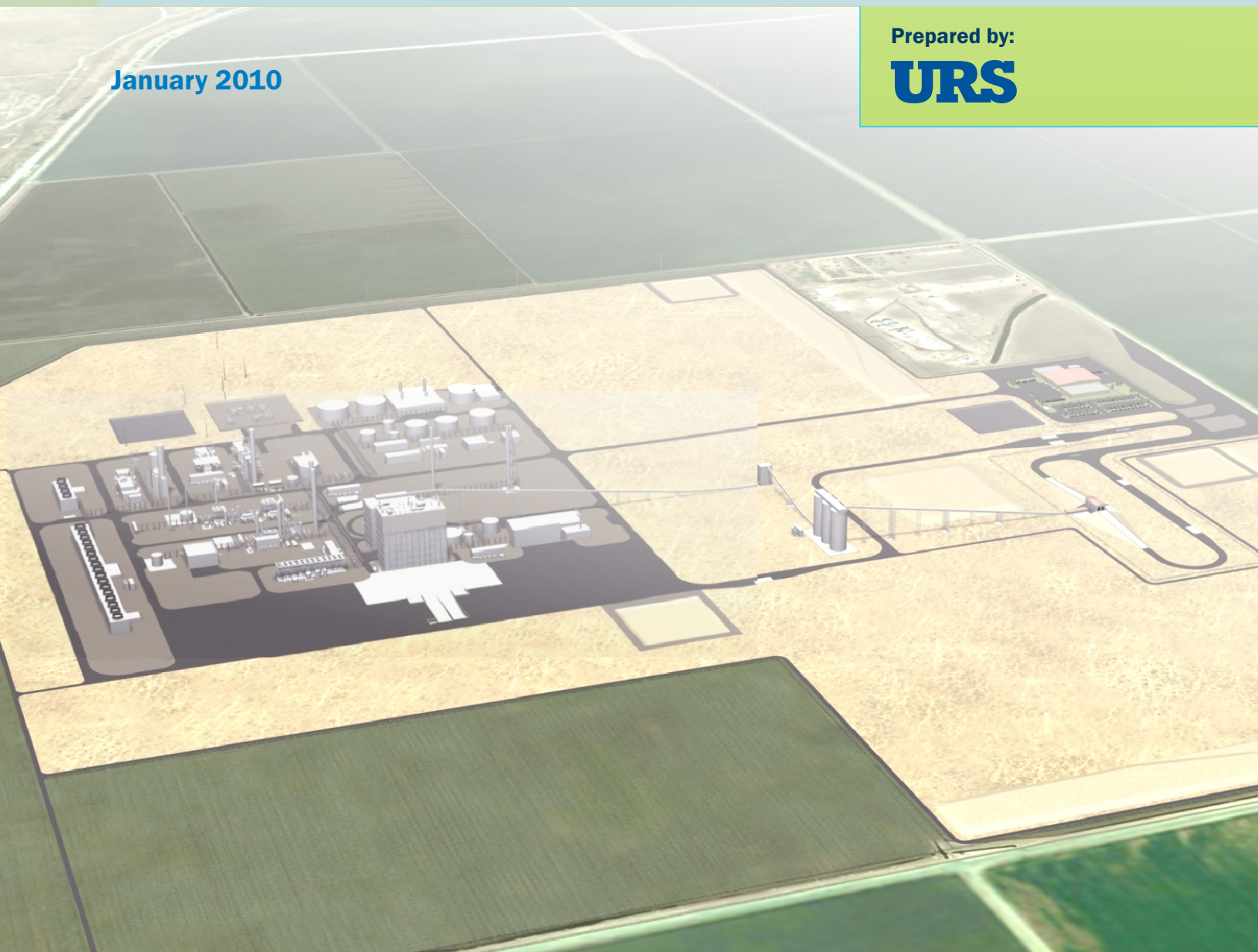
California Energy Commission



January 2010

### Prepared by:

**URS**



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## ATTACHMENTS

Attachment 135-1 Draft Letter to U.S. Army Corps of Engineers

## TABLES

Table 134-1 Habitat Acreages within the Biological Resources Study Area  
Table 134-2 Pre-Construction Agricultural Crops Acreages within the Biological Resources Study Area

## FIGURES

Figure 133-1 Vegetation Community

**LIST OF ACRONYMS AND ABBREVIATIONS USED IN RESPONSES**

AFC	Application for Certification
CEC	California Energy Commission
EMS	Emergency Medical Services
FAA	Federal Aviation Administration
HECA	Hydrogen Energy California
IGCC	Integrated Gasification Combined Cycle
NAHC	Native American Heritage Commission
NIOSH	National Institute of Occupational Safety and Health
ROW	right-of-way
SLF	Sacred Lands File
USACE	U.S. Army Corps of Engineers

**Technical Area:** Biological Resources

**Author:** Amy Golden

## **BACKGROUND**

Generally, the proposed project site and the majority of the linear facilities would be located in agricultural areas. The Biological Resource Study Area that was surveyed in support of the Revised Application For Certification (AFC) covered a larger area which supports different habitat types, some of which provide more habitat value to common and rare plant and wildlife species than agricultural lands. According to the *July 2009 Supplement to the Revised AFC*, the proposed carbon dioxide, natural gas, and potable water pipeline linear facilities would be located predominantly in desert saltbush scrub. Staff needs to know the existing vegetation community types and acreages in order to quantify habitat loss for special-status species. Staff will then use these acreages to determine the appropriate habitat compensation amount in consultation with the applicant, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service.

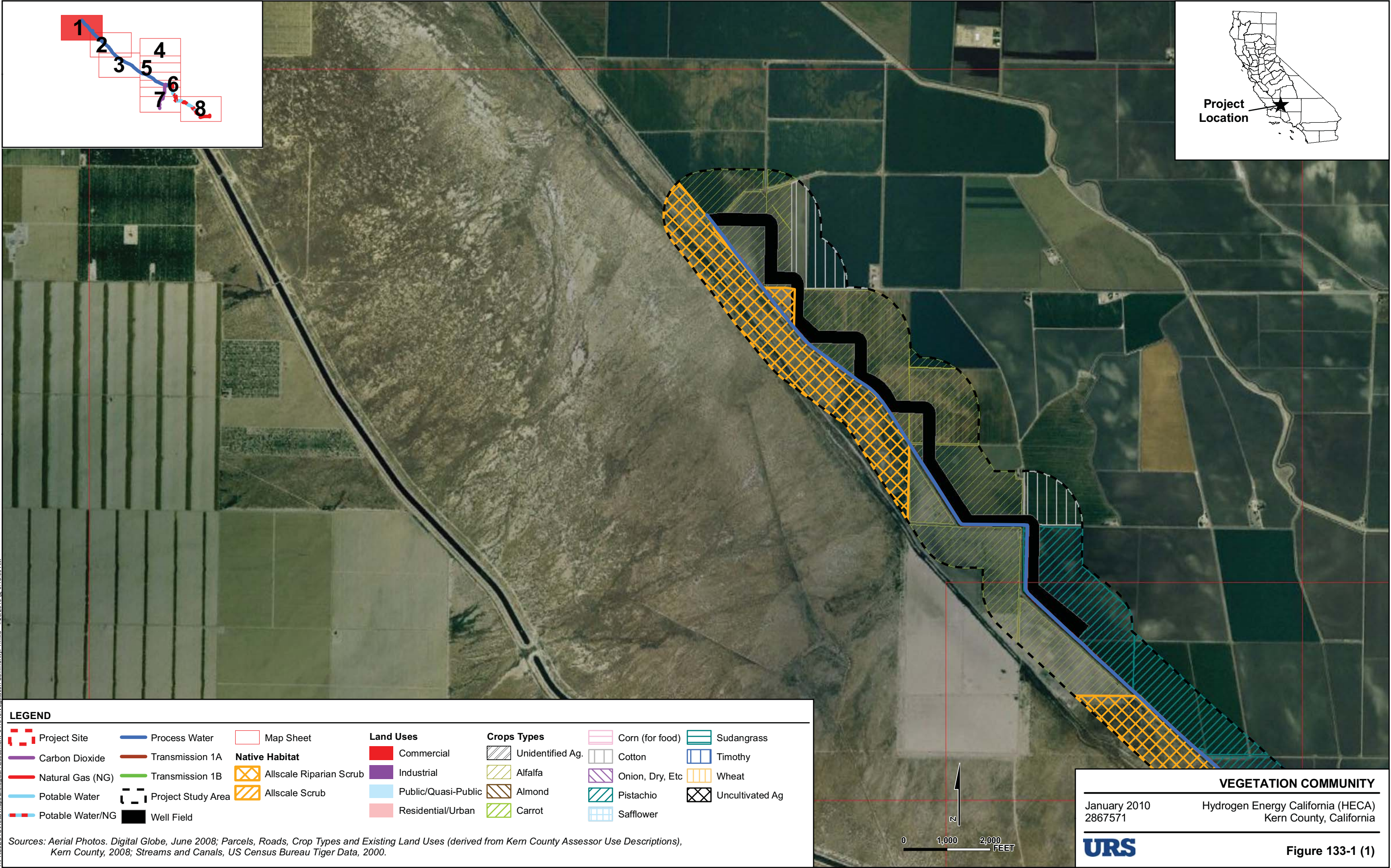
## **DATA REQUEST**

- 133. *Please provide a vegetation community map for the Biological Resources Study Area shown on Figure 5.2-1 in the Revised AFC. If possible, please prepare this figure at a scale of approximately 1:2,000 feet on a current aerial photograph. The vegetation community map must show the project site, all project linear facilities, and the broader study area that was surveyed as part of the Biological Resources Study Area of the Revised AFC.***

## **RESPONSE**

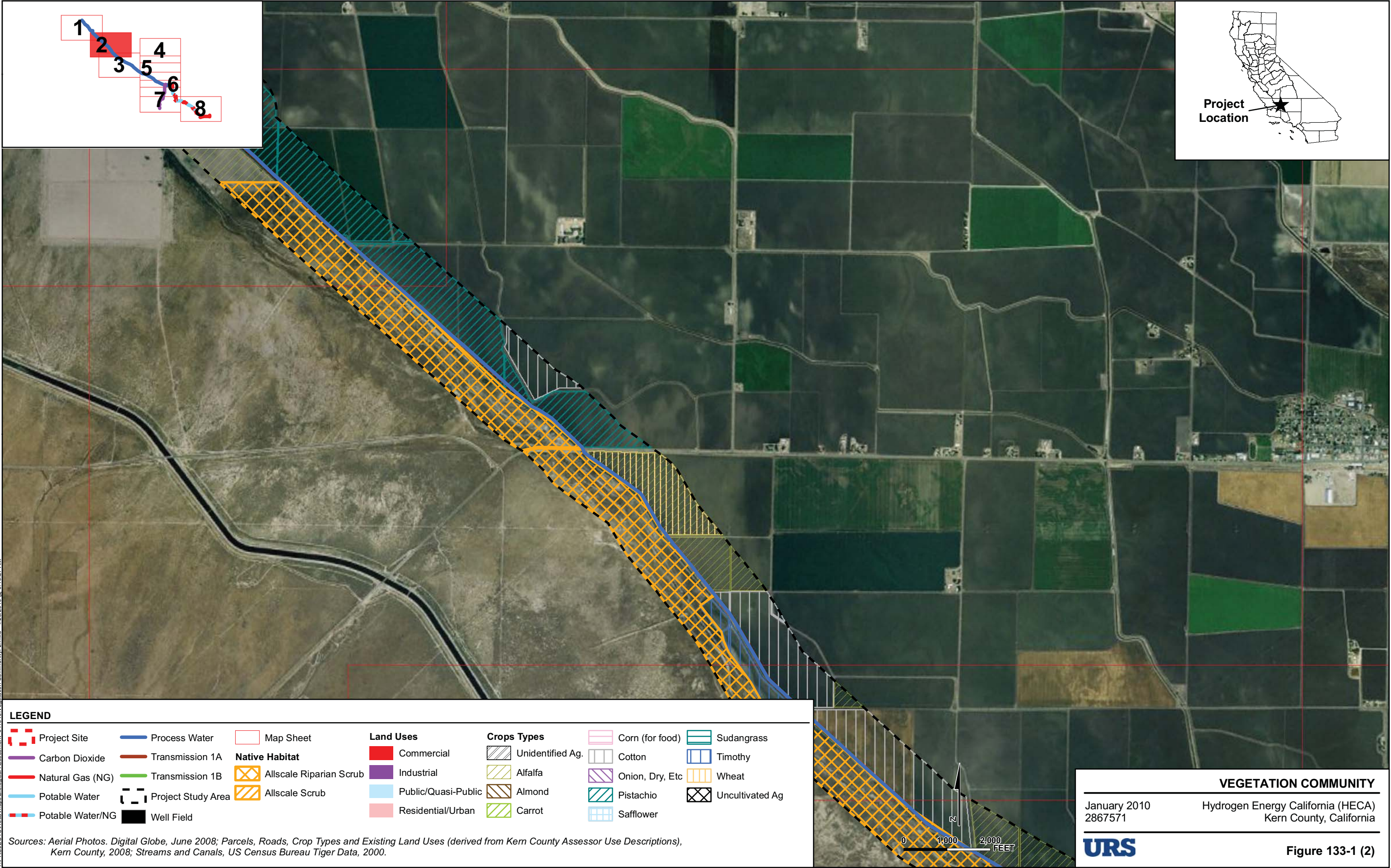
Figure 133-1 presents a vegetation community map for the Biological Resources Study Area that was referred to in the Revised Application for Certification (AFC). The figure has been prepared at the requested scale on an aerial base.





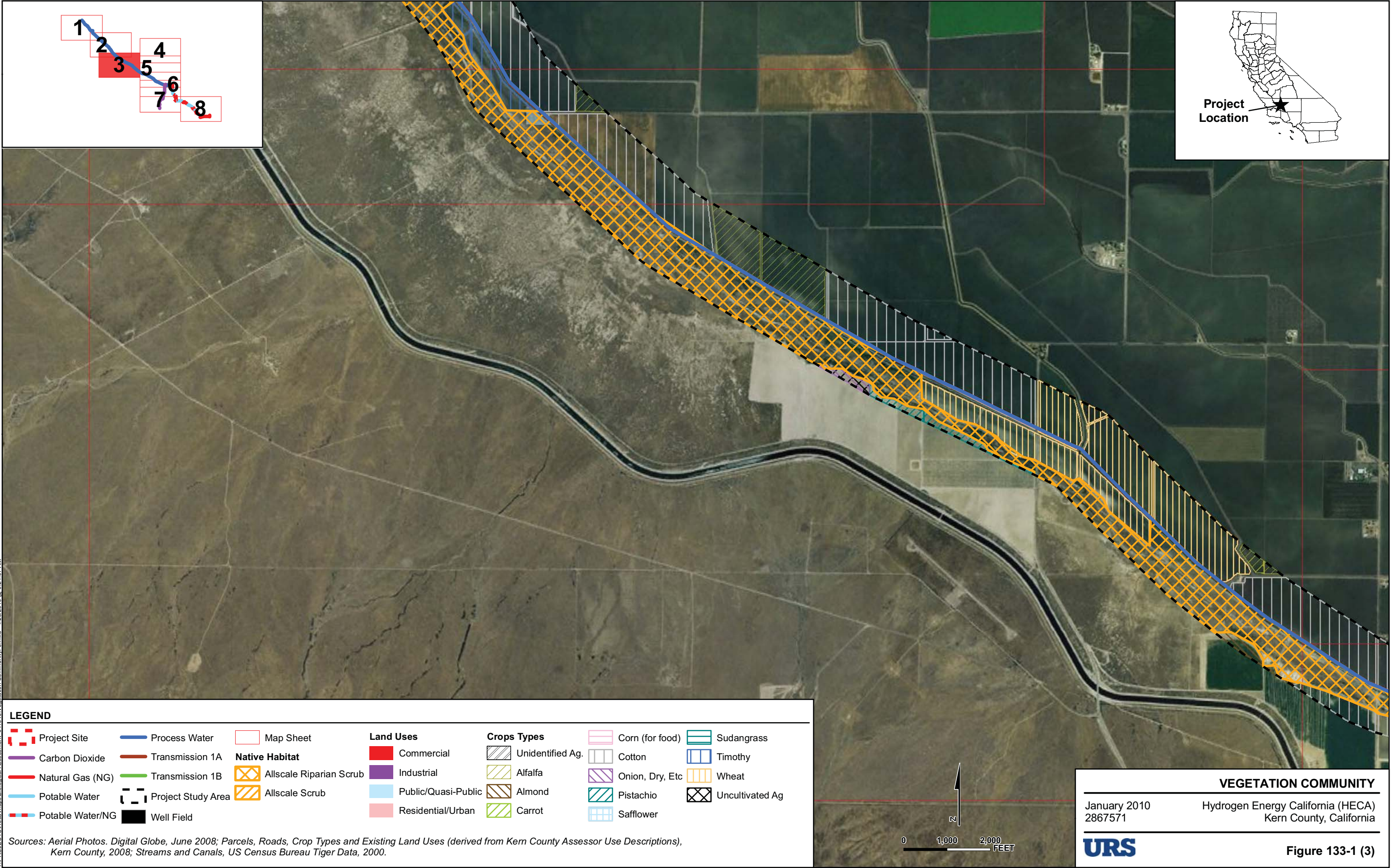
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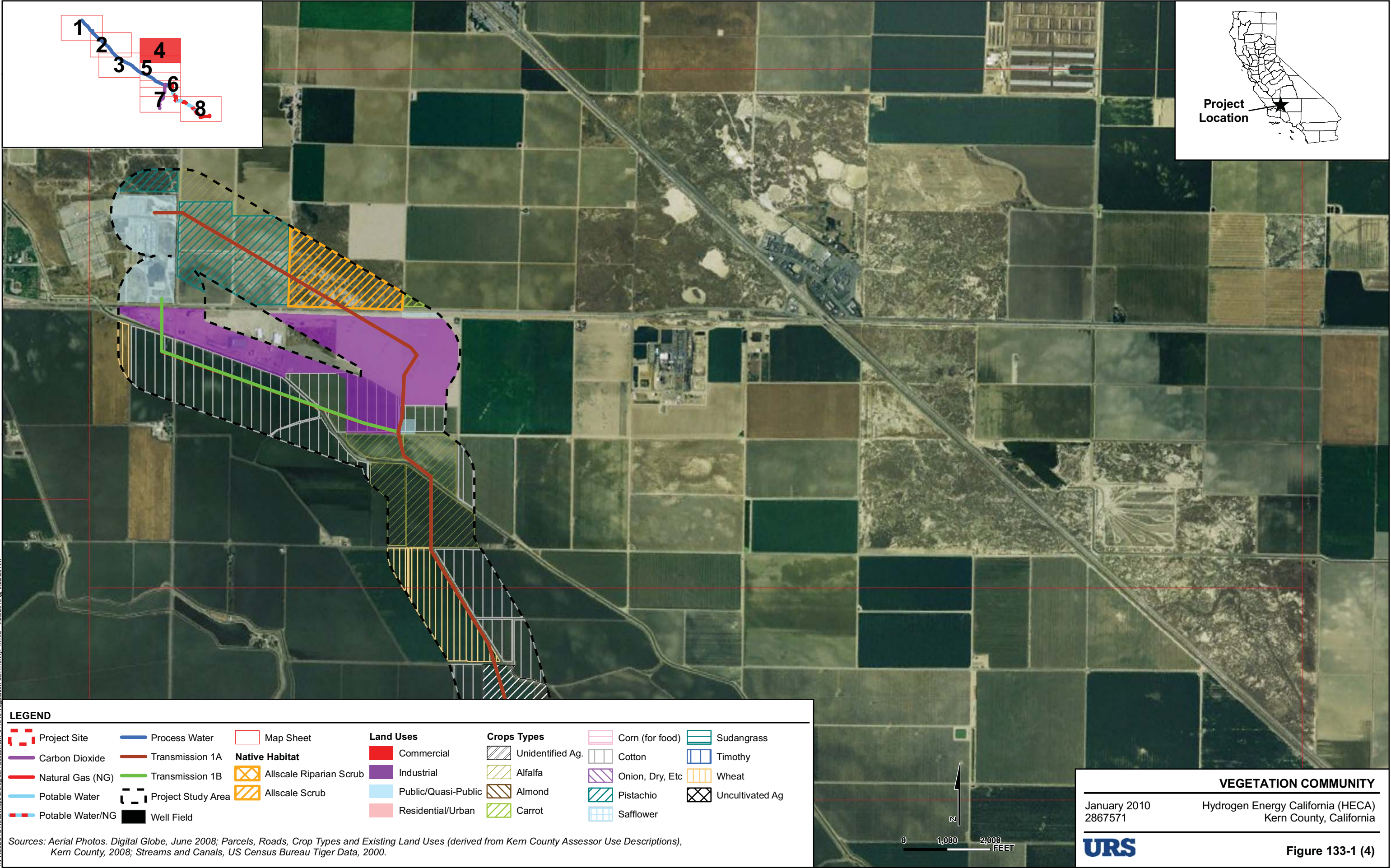


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LEGEND

Project Site	Process Water	Map Sheet	<b>Land Uses</b>	<b>Crops Types</b>	Corn (for food)	Sudangrass
Carbon Dioxide	Transmission 1A	<b>Native Habitat</b>	Commercial	Unidentified Ag.	Cotton	Timothy
Natural Gas (NG)	Transmission 1B	Allscale Riparian Scrub	Industrial	Alfalfa	Onion, Dry, Etc	Wheat
Potable Water	Project Study Area	Allscale Scrub	Public/Quasi-Public	Almond	Pistachio	Uncultivated Ag
Potable Water/NG	Well Field		Residential/Urban	Carrot	Safflower	

Sources: Aerial Photos, Digital Globe, June 2008; Parcels, Roads, Crop Types and Existing Land Uses (derived from Kern County Assessor Use Descriptions), Kern County, 2008; Streams and Canals, US Census Bureau Tiger Data, 2000.

VEGETATION COMMUNITY

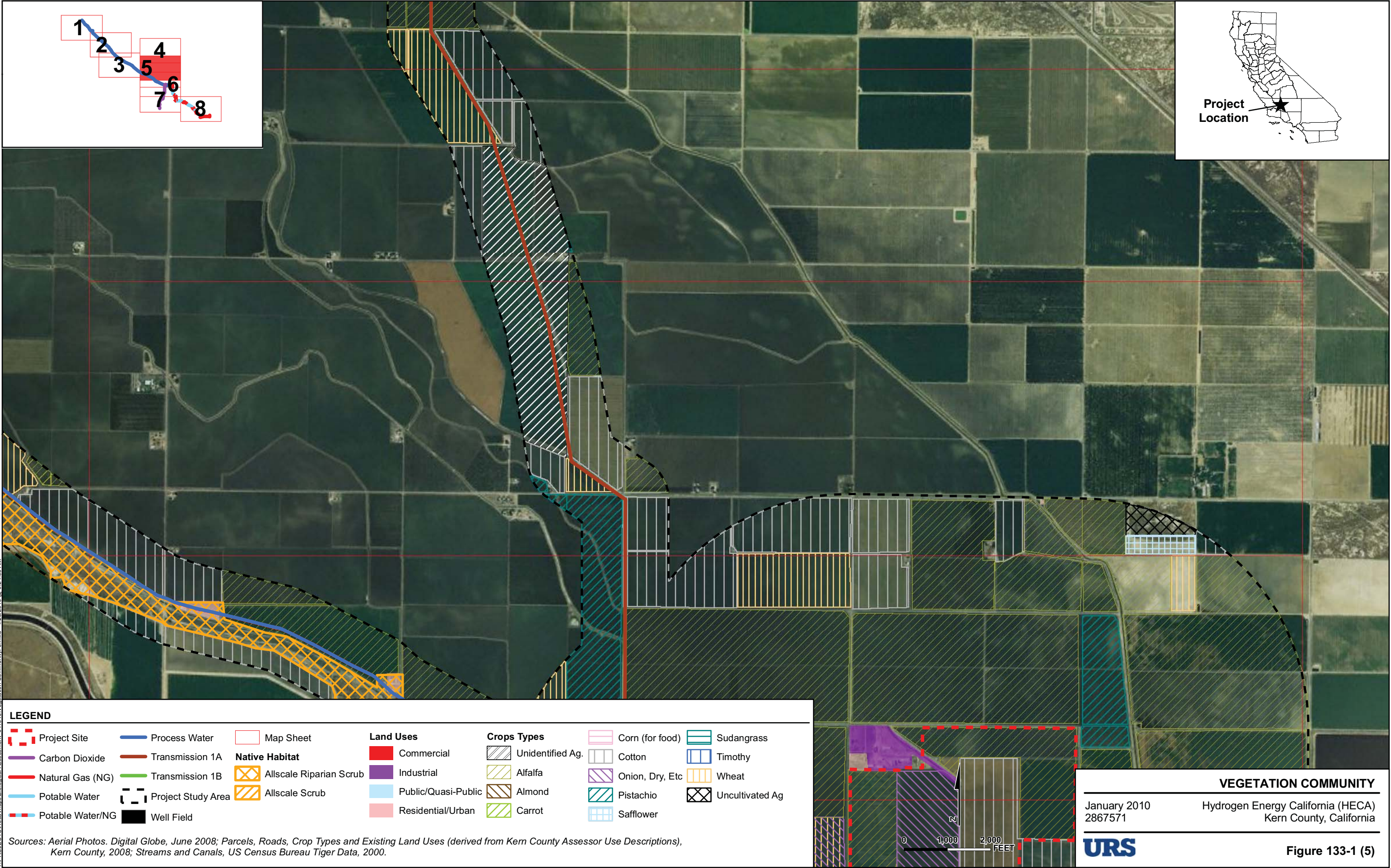
January 2010  
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Hydrogen Energy California (HECA)  
Kern County, California



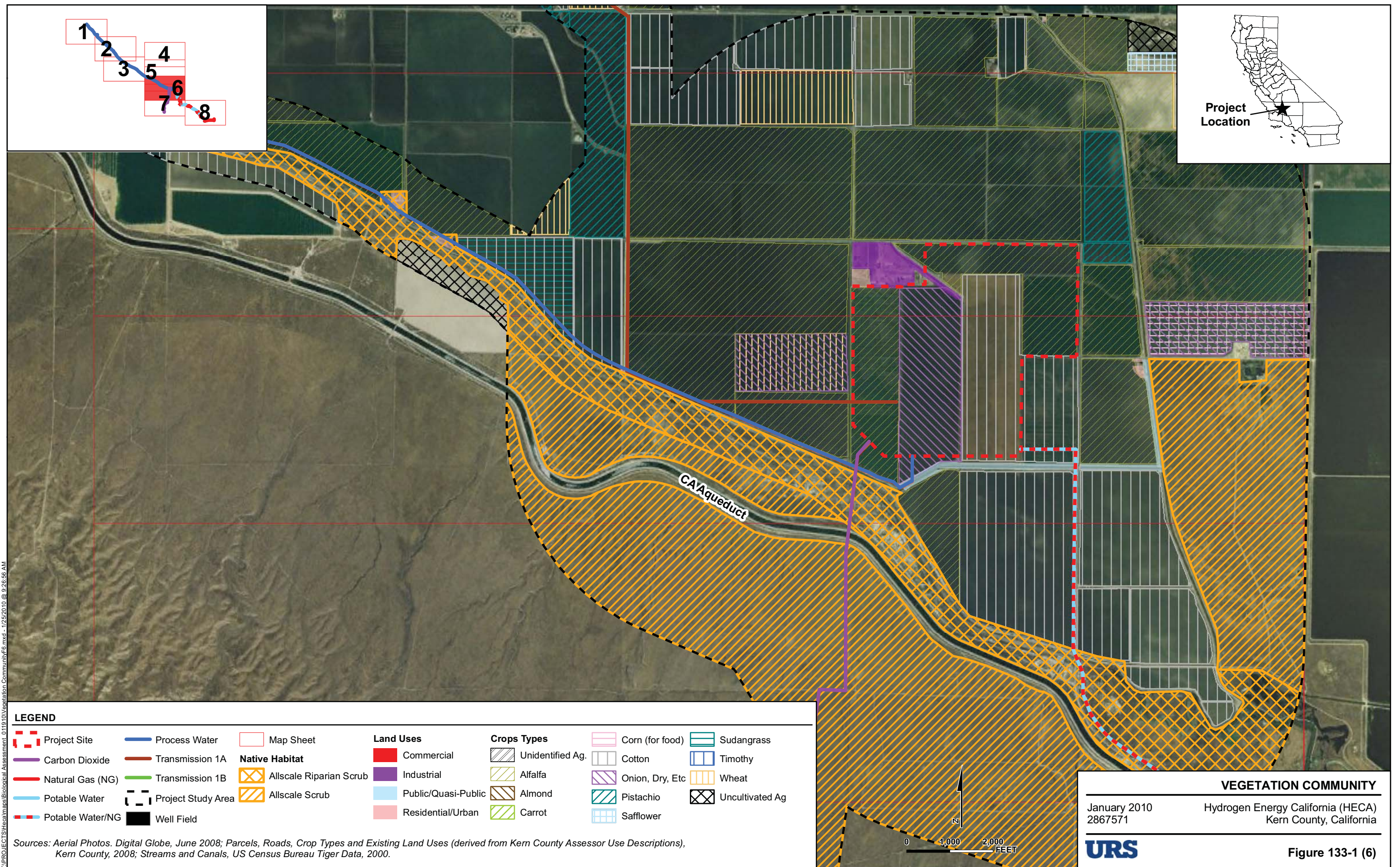
Figure 133-1 (4)



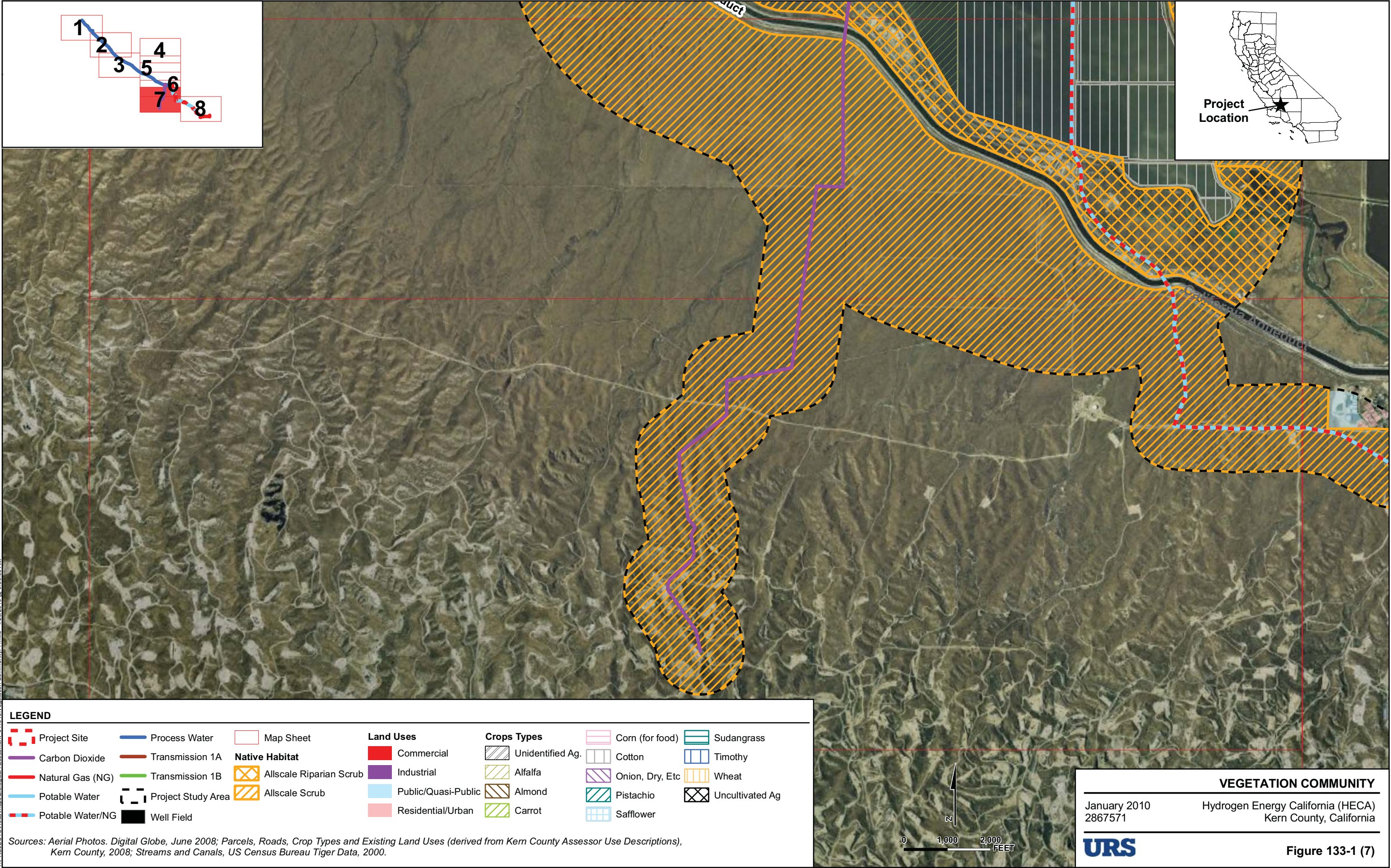


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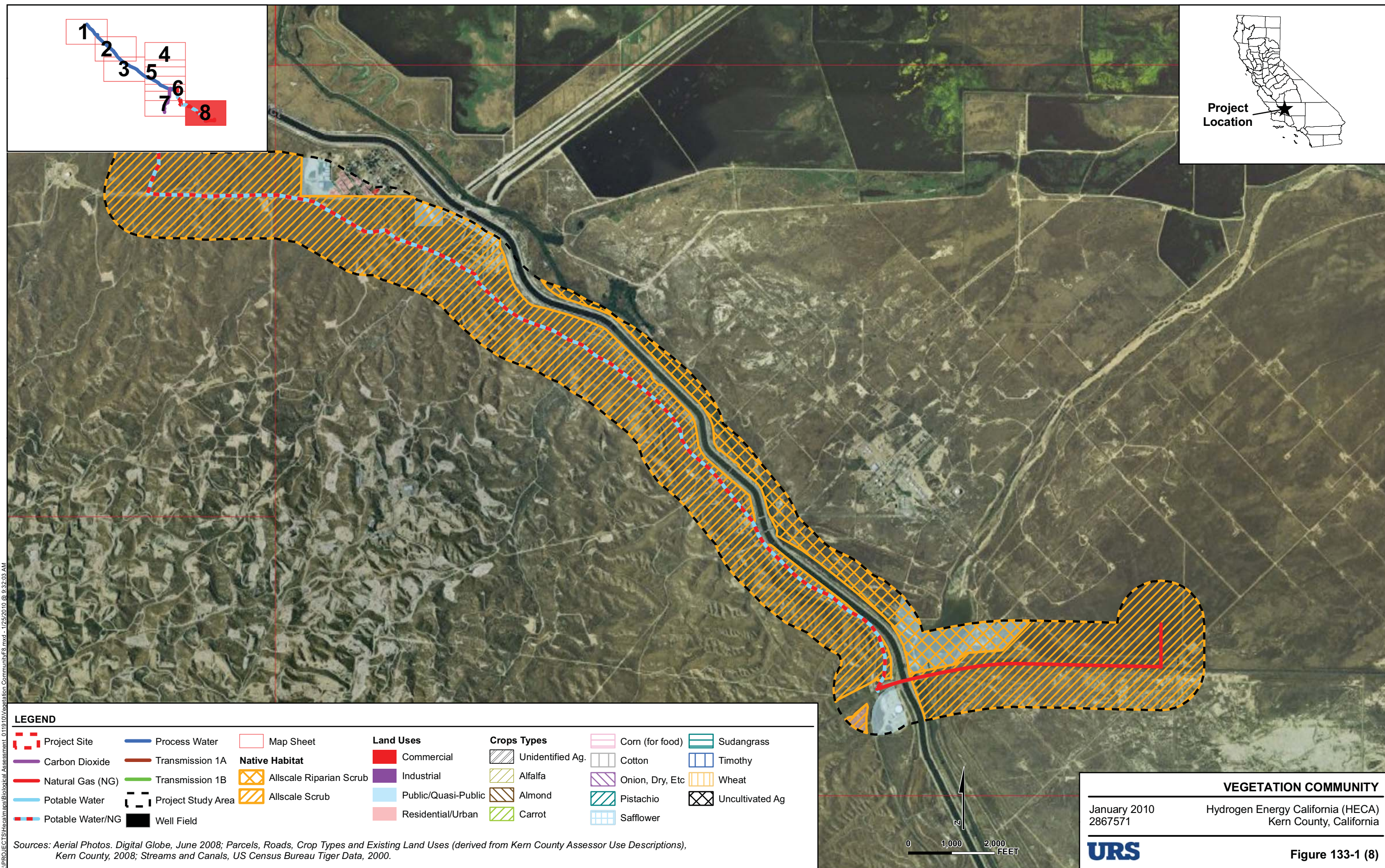














## DATA REQUEST

**134. Please indicate the following items: a. whether each vegetation community is native or agricultural, b. baseline vegetation community acreage, c. post-project habitat acreages, impact type (permanent or temporary). For to the extent possible, please further characterize agricultural land use types by row or crop type and quantify acreages. Staff considers areas important that are identified as desert saltbush scrub where occurrences or sign of burrowing owl, western spadefoot toad (in intermittently ponded areas), blunt-nosed leopard lizard, San Joaquin kit fox, and other species have been found or have been indicated as a high likelihood of occurring; therefore, these areas should be highlighted in particular.**

## RESPONSE

- a. Figure 133-1 (presented in the response to Data Request 133) depicts the native habitats and agricultural crop types.
- b. The pre-construction native vegetation acreages are shown in Table 134-1 and pre-construction agricultural crops acreages are shown in Table 134-2.
- c. Table 134-1 lists the temporary and permanent impacts to habitat acreages, along with pre- and post-construction habitat acreages. Agricultural land use types have been included on Figure 133-1 in a breakdown of crop types, and baseline acreages are shown in Table 134-2. The native vegetation community consists of allscale scrub and allscale riparian scrub, both of which have the potential to support the special status species identified in the Revised AFC.



**Table 134-1**  
**Habitat Acreages within the Biological Resources Study Area**

<b>Habitat Type</b>	<b>Pre-Construction Acres</b>	<b>Temporary Impacts</b>	<b>Permanent Impacts</b>	<b>Post-Construction Acres</b>
Allscale Scrub	3,711.6	63.5	1.5	3,710.1
Allscale Riparian Scrub	1,815.3	0	0	1,815.3

**Table 134-2**  
**Pre-Construction Agricultural Crops Acreages within the Biological Resources Study Area**

<b>Crops</b>	<b>Acres</b>
Alfalfa	3,069.1
Almond	7.9
Carrot	2
Corn/Cotton/Onion	101.4
Cotton	1,998.4
Onion Dry etc	140.4
Onion Dry/Wheat	79
Pistachio	659
Safflower	15.4
Sudangrass	0.2
Sudangrass/Cotton	76.3
Timothy	22.6
Uncultivated Ag	60.1
Unidentified Ag	234.8
Wheat	394
Wheat/Alfalfa	62
<b>Total</b>	<b>6,922.6</b>

## BACKGROUND

There are several waterways that occur within the project site and/or routes for linear facilities that may fall under the regulatory jurisdiction of the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act and/or California Department of Fish and Game under Section 1600 of the California Fish and Game Codes. These include, but are not limited to the following: California Aqueduct, Kern River, Kern River Flood Control Channel, West Side Canal, irrigation ditches, and several small swales and ephemeral washes. Staff needs a better understanding from the USACE on the jurisdictional status of the identified waters in order to assess project impacts to potentially jurisdictional waters of the U.S. Staff believes that waiting until the final linear facilities are determined to submit a letter of concurrence to the USACE on the jurisdictional status of the identified waters could delay completion of staff analysis and project permitting.

## DATA REQUEST

- 135. *Please provide evidence of efforts to coordinate with the USACE on whether a formal wetland delineation and/or Jurisdictional Determination will be required for the potentially jurisdictional waters that were identified in the Revised AFC. Please provide copies of written correspondence between the applicant and the appropriate USACE office that give an indication of the status of the USACE Jurisdictional Determination process.***

## RESPONSE

URS communicated with Mr. Ramon Aberasduri at the U.S. Army Corps of Engineers (USACE) on January 21, 2010. The discussion included whether there was a need to obtain a permit from USACE for the Hydrogen Energy California (HECA) Project and discussion of potential jurisdictional waters and wetlands. Attached to this response is the letter the Applicant sent to USACE on January 28, 2010 requesting concurrence that no permit from USACE is required for the HECA Project.



**ATTACHMENT 135-1**  
**LETTER TO U.S. ARMY CORPS OF ENGINEERS**



January 28, 2010

Mr. Ramon Aberasduri  
U.S. Army Corps of Engineers, Sacramento District  
1325 J Street  
Sacramento, CA 95814

**Subject: Kern County, California**

Dear Mr. Aberasduri:

The purpose of this letter report is to request your concurrence that the Integrated Gasification Combined Cycle power generating facility called Hydrogen Energy California (HECA or Project) is avoiding all Federal Waters and wetlands and that no permit from the U.S. Army Corps of Engineers (USACE) will be required. The Revised Application for Certification (AFC) was submitted to the California Energy Commission (CEC) in May 2009, and the Project is currently under review by the CEC. Details of the Project, including the Project Description, identification and discussion of Jurisdictional Waters, and proposed avoidance and minimization measures are detailed below.

### **Project Description**

Hydrogen Energy California LLC (HECA LLC) is jointly owned by BP Alternative Energy North America Inc., and Rio Tinto Hydrogen Energy LLC. HECA LLC is proposing to build the Project in Kern County, California. The Project will produce low-carbon baseload electricity by capturing carbon dioxide (CO<sub>2</sub>) and transporting it for CO<sub>2</sub> enhanced oil recovery (EOR) and sequestration (storage)<sup>1</sup>.

The 473-acre Project Site is located on the southwestern side of unincorporated Kern County, approximately 7 miles west of the outermost edge of the city of Bakersfield and 1.5 miles northwest of the unincorporated community of Tupman, and immediately south of Adohr Road, as shown in Figure 1, Project Vicinity. The Project Site is near a hydrocarbon-producing area known as the Elk Hills Field.

The Project Site is currently used for farming purposes, including cultivation of cotton, alfalfa, and onions. Land surrounding the Project Site is also used primarily for farming purposes, particularly the cultivation of alfalfa and cotton. The West Side Canal/Outlet Canal, Kern River Flood Control Channel (KRFCC), and the California Aqueduct (State Water Project) are located 500, 700, and 1,900 feet south of the Project Site, respectively.

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<sup>1</sup> This carbon dioxide will be compressed and transported via pipeline to the custody transfer point at the adjacent Elk Hills Field, where it will be injected. The CO<sub>2</sub> EOR process involves the injection and reinjection of carbon dioxide to reduce the viscosity and enhance other properties of the trapped oil, thus allowing it to flow through the reservoir and improve extraction. During the process, the injected carbon dioxide becomes sequestered in a secure geologic formation. This process is referred to herein as CO<sub>2</sub> EOR and Sequestration.





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U.S. Army Corps of Engineers, Sacramento District  
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The Project will gasify petroleum coke (petcoke) (or blends of petcoke and coal, as needed) to produce hydrogen to fuel a combustion turbine operating in combined cycle mode. The Gasification Block feeds a 390-gross-megawatt (MW) combined cycle plant. The net electrical generation output from the Project will provide California with approximately 250 MW of low-carbon baseload power to the grid. The Gasification Block will also capture approximately 90 percent of the carbon from the raw syngas at steady-state operation, which will be transported to the Elk Hills Field for CO<sub>2</sub> EOR and Sequestration.

The Project also includes the following off-site facilities, as shown on Figure 2, Project Location Map:

- **Electrical Transmission Line** – An electrical transmission line will interconnect the Project to Pacific Gas & Electric's (PG&E) Midway Substation. The proposed transmission line is approximately 8 miles in length.
- **Natural Gas Supply** – A natural gas interconnection will be made with PG&E or SoCalGas natural gas pipelines, each of which are located southeast of the Project Site. The natural gas pipeline will be approximately 8 miles in length. Horizontal Directional Drilling (HDD) will be used to install the pipeline under the Outlet Canal, the Kern River, the KRFCC, and the California Aqueduct.
- **Water Supply Pipelines** – The Project will use brackish groundwater supplied from the Buena Vista Water Storage District, located to the northwest. The raw water supply pipeline will be approximately 15 miles in length. Potable water for drinking and sanitary use will be supplied by West Kern Water District to the southeast. The potable water supply pipeline will be approximately 7 miles in length. HDD will be used to install the potable water pipeline under the Outlet Canal, the KRFCC, and the California Aqueduct.
- **Carbon Dioxide Pipeline** – The CO<sub>2</sub> pipeline will transfer the CO<sub>2</sub> captured during gasification from the Project Site southwest to the custody transfer point. The CO<sub>2</sub> pipeline route will be approximately 4 miles in length. HDD will be used to install the pipeline under the Westside Canal, the KRFCC, and the California Aqueduct.

HDD techniques will be used to install the potable water, natural gas, and CO<sub>2</sub> pipeline linears under these features to avoid impacts to waters of the United States. The approximately 100-foot by 150-foot entry/exit pits required for HDD drilling would also avoid waters of the United States. Therefore, this pipeline will not impact potential waters of the United States. See Figure 3 (Sheets 1 through 4) for the location of the natural gas and potable water line alignment, entry/exit pits locations, and potential



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Waters of the United States. The HECA Project draft frac-out plan is included as Attachment A.

### **Jurisdictional Waters**

Five noteworthy water features are in the Project area. The Kern River and the KRFCC are jurisdictional waters of the United States and/or the state of California. The California Aqueduct is located approximately 1,900 feet southwest of the Project Site. There are also two large and numerous small irrigation canals in the Project area.

### ***Potential Waters of the United States***

Formal delineations have not been conducted for the Project Site and linear facilities, though an informal examination was conducted during site assessment surveys. The informal examination was conducted to identify potential waters of the United States that were ultimately avoided during Project design. Potential waters of the United States have been mapped and are shown in Figure 3 (Sheets 1 through 6).

The Kern River is a regionally large and biologically important jurisdictional water. It flows west-southwest through the city of Bakersfield, under State Route (SR) 119 east of Tupman Road. The river changes course and then flows southeastward into Lake Webb, a jurisdictional federal waters. A sizable tributary of the Kern River, the KRFCC is located approximately 700 feet south of the Project Site. The Kern River and its tributaries may be classified as a water of the United States because of the well-defined bed and bank.

The Project Site is within agricultural fields that have a generally flat topography. The only drainage features within the Project Site are irrigation ditches. These irrigation ditches, the West Side Canal and the Outlet Canal, are excavated on dry land and are not considered waters of the United States. These features do not have a direct hydrological connection to the Kern River or KRFCC.

The natural gas interconnection and potable water pipeline linear will be co-located along the same alignment between the Project Site and the intersection of SR 119 and Tupman Road. The natural gas interconnection and potable water linear will both cross under the Outlet Canal, KRFCC, and California Aqueduct in two locations (northwest of the town of Tupman and along SR 119).

The proposed CO<sub>2</sub> pipeline routes proceed predominantly south from the southwestern corner of the Project Site. The CO<sub>2</sub> pipeline will cross under the Westside Canal, KRFCC, and California Aqueduct. On the south side of the California Aqueduct, there are numerous small swales and washes and one ephemeral wash. These swales and washes are not likely to be classified as waters of the United States because of a lack of





Mr. Ramon Aberasduri  
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hydraulic connectivity with another jurisdictional water of the United States; however, they may fall within the California Department of Fish and Game (CDFG) jurisdiction as waters of the State.

The electrical transmission line (routes 1A or 1B) travel north and west from the Project Site to the PG&E Midway Substation. The majority of the approximately 8-mile route is adjacent to road shoulders and within areas of active agriculture. Near the PG&E Midway Substation, undeveloped parcels with small wetland features may fall under CDFG jurisdiction as state wetlands and USACE as federal waters.

### ***Wetlands***

In the absence of human disturbance or unusual circumstances, an area must possess indicators (characteristics) of three parameters to be considered a federal jurisdictional wetland under Section 404 of the Clean Water Act. This three-parameter approach considers (1) hydrophytic vegetation; (2) hydric soils; and (3) wetland hydrology. State wetlands are required to meet only one of the three parameters to be classified as a wetland.

Formal wetland delineations were not conducted for the Project Site and linear facilities, though an informal examination was conducted during site assessment surveys. During the site assessment surveys, the Kern River showed a well-defined “bed and bank” and woody hydrophytic vegetation. Portions of the Coles Levee Preserve north of SR 119 showed indications of ponded water and potentially hydrophytic herbaceous vegetation; these areas would be avoided by HDD. These areas likely meet both state and federal criteria for wetlands.

The natural gas interconnection, potable water linear, and CO<sub>2</sub> line crosses multiple dry swales. Although the vigor of the plants suggests that water flows through the swales during wet periods, the dominance of upland species and lack of hydrophytic species indicate that these swales are not federal jurisdictional wetlands. Additionally, the drainage features on the south side of the California Aqueduct are now isolated and no longer connect to the Kern River or other significant drainage feature due to the construction of the aqueduct.

### ***California Aqueduct***

The California Aqueduct conveys water from northern California to southern California for drinking water and irrigation purposes. The California Aqueduct is a significant component of the California Department of Water Resources’ State Water Project. The concrete-lined channel has a typical cross section of 12 meters at the base and an average depth of 9 meters. The Project as designed will not impact the California Aqueduct.



Mr. Ramon Aberasuri  
U.S. Army Corps of Engineers, Sacramento District  
January 28, 2010  
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### **Avoidance and Minimization Measure**

The following avoidance and minimization measure is included in the Revised AFC submitted to the CEC.

#### ***BIO-21 Wetlands and Waters of the U.S.***

Work within 100 feet of waters of the United States and/or water of the State will incorporate Best Management Practices (BMPs) to ensure against fill and/or degradation of waters. BMPs might include the following:

- Orange fencing to demarcate the extent of work zones;
- During storm events, use of weed-free erosion control mechanisms;
- Periodically inspection of work zones by qualified biologists to ensure that BMP practices are being adhered to.

Reporting on work adjacent to wetlands will be included in the Biological Resource Mitigation Implementation and Monitoring Plan, a monthly report submitted to the CEC, CDFG, and the U.S. Fish and Wildlife Service.

Please refer to CEC docket number 08-AFC-08 in any correspondence concerning the HECA Project. If you have any questions, please contact David Kisner, URS, 2625 South Miller Street, Suite 104, Santa Maria, CA, 93455, email [David\\_Kisner@urscorp.com](mailto:David_Kisner@urscorp.com), or telephone (805) 361-1299.

Thank you,

A handwritten signature in blue ink, reading "David Kisner".

David Kisner  
Project Biologist

Attachments



# **HDD FRAC OUT PLAN**

## **Hydrogen Energy California**

### **1.0 Construction Monitoring**

Pipeline construction personnel will monitor all directional drilling during construction:

- Prior to drilling, personnel will be familiarized with frac-out detection, notification and response.
- Monitoring personnel will have appropriate communication equipment to contact the HDD construction foreman.
- Observation of the crossing area is to be conducted during all drilling activities, particularly when mud circulation is active.
- Upon a sustained loss in fluid pressure or loss of circulation, the HDD operator will immediately notify the construction monitors with the position of the drill head.

### **2.0 Response to Frac-Outs**

In the event of a frac-out, the release will be assessed to determine the amount of drilling mud released and potential for the release to reach a waterway. Response measures will vary based on the location of the frac-out:

#### **Land Locations**

- Initiate immediate suspension of the directional drilling operation.
- Advise HECA /construction contractor representatives.
- Evaluate the release to determine if containment structures will effectively contain the release.
- Install containment as needed to prevent an uncontrolled release of drilling mud.

#### **Waterway Locations**

- Initiate immediate suspension of directional drilling operations.
- Advise HECA/construction contractor representatives.
- Document and monitor release.
- Review drill pressures, pump volume rates, and drill profile.
- Implement steps to contain frac-out material and evaluate the current drill profile to identify means to prevent further frac-out events.

### **3.0 Containment**

Containment, response and clean-up equipment shall be available at both sides of the HDD crossing location. Equipment shall include the following:

- straw bales
- silt fencing
- plastic sheeting
- mud pumps and hose
- mud storage tanks
- vacuum truck

#### **Land Locations**

- Deploy appropriate containment measures to contain and recover drilling mud as feasible.
- Remove excess mud at a rate sufficient to prevent an uncontrolled release.

#### **Wetland Locations**

- Evaluate the release and deploy appropriate response and containment methods.
- Small surface releases that do not allow practical collection of released material shall be diluted with fresh water and/or the fluid allowed to dry and dissipate naturally.
- Surface releases exceeding a volume that allow complete containment with hand-placed barriers can use small collection sumps (less than 5 cubic yards) to remove released drilling mud by the use of portable pumps and hoses.
- Surface releases exceeding volumes that can be contained and collected using small sumps shall require a suspension of drilling operations until surface release volumes can be brought under control.
- Excess mud will be held within a contained area and removed using pumps at a rate sufficient to maintain secure containment.
- Mud will be stored in a temporary holding tank out of the wetland for reuse or disposal in an approved disposal facility.

#### **In-Stream Locations**

- In general, containment is not feasible for in-stream releases. Conditions are to be assessed to determine whether hand-placed containment, recovery or other measures, such as silt curtains, would be effective and beneficial at the specific release site.



- After initial assessment drilling operations will be allowed to resume unless the release poses a safety or environmental threat as determined by the HECA/construction contractor representative.

#### **4.0 Notification**

For all drilling mud releases during HDD crossings, the Contractor will notify the drilling foreman. The drilling foreman will immediately notify the appropriate HECA/construction contractor representative as required in the project communications plan. A HECA/construction contractor representative will assess the severity of the release and determine if further notifications to other agencies are required. A HECA/construction contractor representative will complete all agency notifications.

#### **5.0 Clean-up**

Clean-up measures will be implemented following frac-outs in on shore areas.

- Drilling mud will be cleaned up using methods that do not cause extensive ancillary damage to existing vegetation. This would include the use of hand tools such as shovels, buckets and brooms. If allowed by the HECA/construction contractor representative, fresh water washes can also be used if deemed beneficial and feasible.
- Containment structures will be pumped out and the ground surface scraped to bare topsoil without causing undue loss of topsoil or ancillary damage to existing and adjacent vegetation.
- Material will be collected in containers for temporary storage prior to removal from the site.
- Potential for secondary impact from the clean-up process is to be evaluated. A HECA/construction contractor representative shall determine if clean-up activities are to continue if physical damage to the site will exceed the benefits of removal activities.
- In general, no clean-up measures will be initiated for in-stream releases. If site specific conditions are such that containment and clean-up may be feasible and beneficial, fresh water washes or other low-impact steps may be employed without undue disturbance to the stream banks and bed.



## PROJECT VICINITY

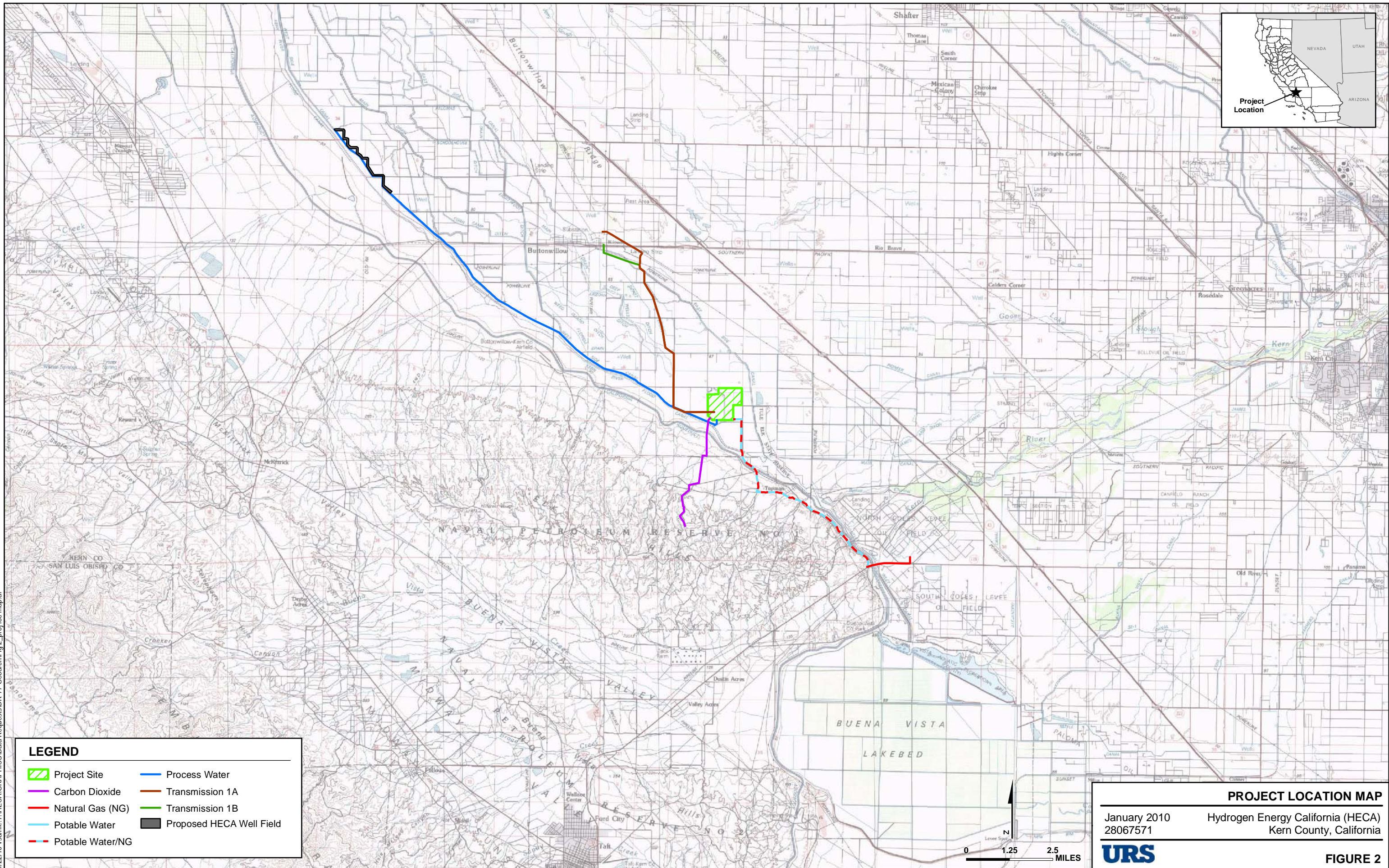
January 2010 Hydrogen Energy California (HECA)  
28067571 Kern County, California

**URS**

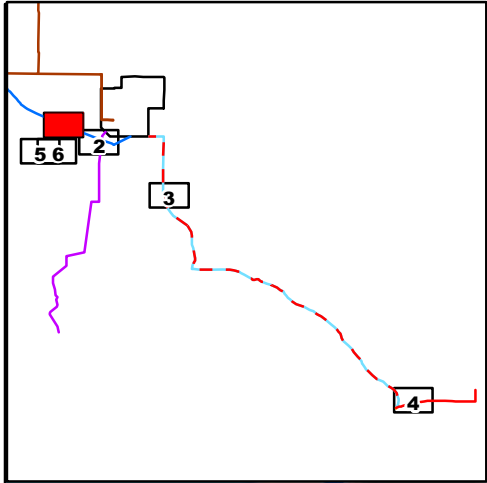
**FIGURE 1**



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**LEGEND**

Project Site	Potable Water/NG	1,000 Foot Radius from Linears
Carbon Dioxide	Process Water	Potential Waters of the U.S.
Natural Gas (NG)	Transmission	
Potable Water	Slant Bore Entry/Exit Pits	



**WATERS OF THE U.S.**

January 2010  
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Hydrogen Energy California (HECA)  
Kern County, California

**URS**

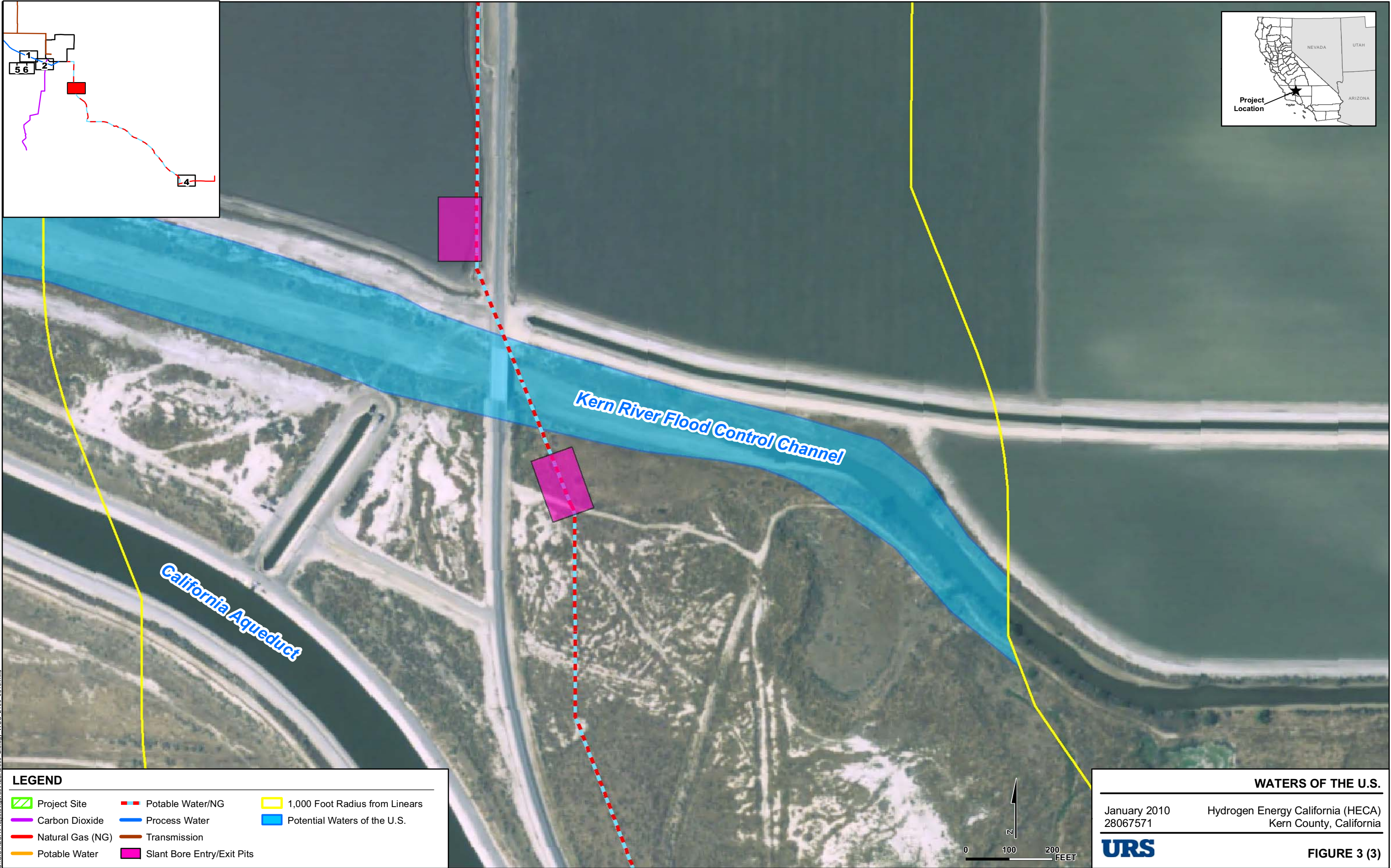
**FIGURE 3 (1)**

Sources: USDA (2005 Aerial Photos). HECA Project Team (Biological Data, 2009).





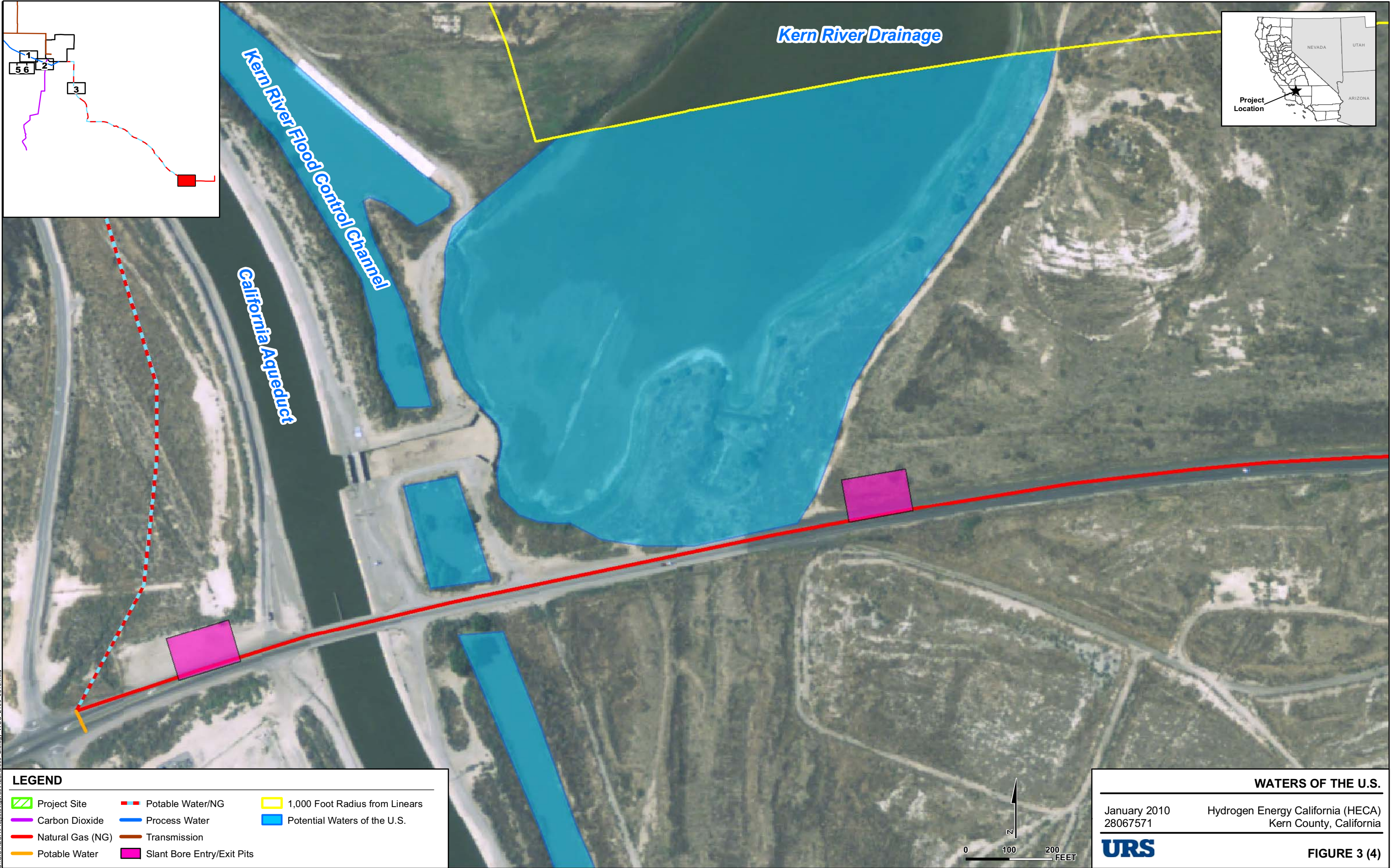




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Sources: USDA (2005 Aerial Photos). HECA Project Team (Biological Data, 2009).







**Technical Area:** Cultural Resources

**Author:** Sarah M. Allred and Michael McGuirt

## BACKGROUND

In the Archaeological Reconnaissance Report of the Revised AFC (May 2009), the Applicant's consultant has stated that the results of the Sacred Lands File search, as requested from the Native American Heritage Commission (NAHC) on four different occasions, resulted in negative findings. However, the February 13, 2009 response letter from the NAHC (included in Appendix B of the technical report) clearly states, "*The Sacred Lands File search did indicate the presence of Native American cultural resources in some of the project areas (APE) submitted in the search request*" (emphasis theirs). Staff needs to determine whether or not sensitive cultural resources have been considered and accounted for in terms of project effects.

## DATA REQUEST

**136. As the Feb. 13<sup>th</sup> letter states the SLF search results are positive, please conduct the necessary research to reconcile this discrepancy. Please describe any known cultural resources identified by the NAHC's Sacred Lands File search and provide copies of any records and maps of these resources. In addition, please indicate whether or not the resources have been evaluated for the California Register of Historic Places (CRHP).**

## RESPONSE

The California Native American Heritage Commission (NAHC) was contacted on four occasions during the course of the HECA Project, with the request that a records search be made of the Sacred Lands File (SLF), as well as a list of local Native American contacts (individuals and/or organizations) that might have knowledge of cultural resources within the HECA Project study area and various linear alternative alignments. A response received from the NAHC on February 13, 2009, states that the SLF search "did indicate" the presence of cultural resources in the HECA Project area.

Although the aforementioned response was positive for cultural resources, the California NAHC is exempt from the disclosure of public records of Native American graves, cemeteries, and sacred places [CA GOV § 6254 (r)]. The NAHC does, however, provide a list of local Native American representatives who are free to provide information regarding pertinent cultural resources. Each of these representatives was contacted by URS, requesting information regarding cultural resources in the project vicinity. No responses received to date have revealed specific information regarding the presence of cultural resources in the HECA Project area.



## BACKGROUND

The area of the proposed project in which all disturbances to cultural resources may potentially occur (referred to by the applicant as 'Area of Potential Effect' or 'APE') is described as the 473-acre project site, as well as all offsite facilities, including the electrical transmission line, natural gas supply line, water supply lines, and carbon dioxide pipeline. It appears, however, that the 628-acre 'Control Area' has been excluded as a part of the project and is not part of the 'APE' description. Under CEQA (Pub. Resources Code, §21065; Cal. Code Regs. tit. 14, §15378), "any activity which may cause either a direct or indirect physical change in the environment or which has the potential to result in either direct or reasonably foreseeable indirect physical change" should be included as part of the project. While the applicant indicates that no construction is planned in the Control Area, the land has been optioned for purchase by the applicant and is proposed to be held and controlled by the applicant as a part of the project. Staff needs to be able to determine all reasonably foreseeable effects to cultural resources related to the project.

## DATA REQUEST

- 137. Please indicate whether or not there are any future plans or future potential for ground-disturbing activities (e.g., parking, trenching, grading, disking, etc.) to occur within the limits of the Control Area. Would a fence be installed along the perimeter of this area? What use restrictions, if any, does the applicant plan to impose for the Control Area?**

## RESPONSE

As stated in Revised AFC Section 5.4.1.6, the primary purposes of the Controlled Area are to ensure ownership and control by the Applicant over public access and land use adjacent to the Project Site. The transmission line would cross the west portion of the Controlled Area. The carbon dioxide pipeline and process water line would cross the southwest portion of the Controlled Area. The potable water and natural gas lines would cross the southeast portion of the Controlled Area. The natural gas supply metering station would be located within the Controlled Area southeast of the Project Site and it would be fenced.

## BACKGROUND

The Archaeological Reconnaissance Report (May, 2009) indicates that site P-15-171 could not be relocated during cultural resources field survey efforts (p. H3-39); however, the mapping submitted in response to Data Request 64 (Figure 64, sheet 2) indicates that the area in which site P-15-171 is plotted has not yet been surveyed. Staff needs to verify which portions of the project area have been subject to pedestrian cultural resources survey.

## DATA REQUEST

- 138. *Please clarify the apparent discrepancy regarding site P-15-171 and verify whether or not all portions of the “no cultural survey” areas of Figure 64 have been subject to pedestrian survey.***

## RESPONSE

The purported location of P-15-171 is adjacent to the process water linear alignment, which was subject to pedestrian archaeological reconnaissance during the 2008 field efforts (Hale et al., 2009). No evidence of the site in the purported vicinity was noted at that time. The site area also falls into the proposed HECA Well Field, which was recently subjected to archaeological pedestrian reconnaissance (Hale and Laurie, 2010). No evidence of P-15-171 was noted during this investigation either. The purported site vicinity has been highly disturbed by various agricultural activities and the construction of the West Side Canal. It should be noted, however, that a lithic scatter was identified approximately 300 meters due south of the purported location of P-15-171 during the recent investigation (Hale and Laurie 2010).

## References

- Hale, Mark R. and Leroy T. Laurie, 2010. Confidential Survey Report Addendum. January 2010.
- Hale, Mark R., Leroy T. Laurie, Josh McNutt, and JRP Historical Consulting, 2009. Archaeological Reconnaissance, Hydrogen Energy California Study Area. Appendix H3 in the Revised Application for Certification for Hydrogen Energy California, Kern County, California.



## BACKGROUND

In Table 2-1 (Project Disturbed Acreage) of the May, 2009 Revised AFC, the construction Right-of-Way (ROW) for the electrical transmission line is listed as being 175 feet wide, which is stated to be the maximum width required in areas where the structures will be installed. However, when calculating the area of disturbance along the transmission line, the 150-foot permanent ROW width has been used instead. Since 175 feet is the stated maximum area of potential physical disturbance required for construction, it would appear that the 175-foot value should be used, instead of the 150-foot value, to calculate the area of disturbance for the 60 structures. In other words, it appears the total disturbance would be calculated as 175-foot x 175-foot area for each of the 60 structures for a total acreage of 42.1 acres. Staff would like to verify the width of the construction ROW for the transmission line structures and verify whether or not a 50-foot buffer, as required by the Energy Commission, was surveyed for cultural resources on either side of the construction ROW limits

## DATA REQUEST

**139. Please explain why the 150-foot value was used, instead of 175 feet, in calculating the area of disturbance in Table 2-1 for the transmission line structures.**

## RESPONSE

The area of permanent disturbance associated with each of the transmission line structures is 150 feet by 150 feet. The additional 25 feet needed for construction of each structure is contained within the 25-foot temporary roadway located along the entire approximate 8-mile distance of the transmission line route. The 175 feet that appear in Table 2-1 consist of the 150-foot permanent right-of-way (ROW) plus the additional 25 feet for the temporary roadway that makes up the 175-foot construction ROW.

## DATA REQUEST

- 140. Please confirm whether or not an Energy Commission 50-foot buffer was surveyed on either side of the 175-foot construction ROW for the transmission line structures.**

## RESPONSE

As noted in the Revised AFC on page 5.3-28 and Appendix H3: Archaeological Reconnaissance, Hydrogen Energy California Study Area, page H3-36, “an examination of a 50-foot-wide buffer radius around the ROW of each of the various linear alternatives was completed.” Pedestrian archaeological reconnaissance of the proposed electric transmission line alternatives included the 175-foot construction ROW and a 50-foot buffer on either side of said ROW, for a total archaeological survey corridor width of 275 feet.



## DATA REQUEST

**141. *If the 50-foot buffer has not been surveyed, please conduct the surveys and present the results to Energy Commission staff.***

## RESPONSE

As stated in the response to Data Request 140, the buffer mandated by the California Energy Commission (CEC) was included in the archaeological survey. As such, additional survey was not required.

## BACKGROUND

On Figure 64, which was submitted in response to Data Request 64, the legend indicates that construction ROW is depicted by a dashed line. It is unclear whether or not this dashed line also encompasses the Energy Commission 50-foot buffer on either side of the construction ROW. Staff needs this information in order to determine which areas have been subjected to pedestrian cultural resource survey, as well as to distinguish between survey areas and construction rights of way.

## DATA REQUEST

**142. Please revise Figure 64 to show the construction ROW, as well as the Energy Commission 50-foot buffer to either side of the construction ROW, for the linear facilities.**

## RESPONSE

The figures contained within the recently submitted addendum to Appendix H3 depict archaeological survey areas that comprise the construction ROW and CEC-mandated 50-foot buffers (see Response to Set One Data Request 65, January 2010). Specifically, for the Well Field a 400-foot-wide survey corridor is depicted, comprising a 300-foot-wide ROW and 50-foot buffers along either side. For the modified transmission line alternative routes 1A and 1B, a 275-foot-wide survey corridor is depicted, comprising a 175-foot-wide ROW and 50-foot buffers along either side. These metrics are also provided in the text of the response to Data Request 65, and appear on page 5.3-28 of the Revised AFC and page H3-36 of Appendix H3. The addition of the 50-foot buffer to Figure 64 was determined to be ineffective at the scale of mapping required by the CEC, and therefore has not been provided.



## BACKGROUND

The applicant has objected to Data Requests 78 and 79. Although staff would not agree with the applicant's perspective that Data Requests 78 and 79 are overly burdensome or not reasonably possible, staff appreciates the applicant's willingness to work toward an approach agreeable to both parties. Staff needs to be able to establish a factual basis for the assessment of potential effects to buried deposits within the project limits. In the absence of such information, to appropriately configure the cultural resources monitoring for this project, staff may need to recommend conditions of certification providing that a subsurface study, such as was requested in Data Requests 78 and 79, be conducted post-certification and pre-construction.

## DATA REQUEST

***143. Staff respectfully requests that, in addition to completing Data Request 77, the applicant consider conducting a field mapping effort that would conform with Subpart A of Data Request 78, and then, on the basis of the results of Data Request 77 and Subpart A of Data Request 78, the applicant and staff would consult at the next Data Request workshop on the need to conduct a subsurface geoarchaeological investigation.***

## RESPONSE

A geoarchaeological report has been submitted by URS as the response to Set One Data Request 77. URS Geoarchaeologist Jay Rehor determined in this report that there did in fact exist sufficient data to address the Commission's concerns for buried archaeological resources. Figure 77-5, provided within Mr. Rehor's geoarchaeological report, shows extant landforms within the project vicinity based on existing soils maps, geologic maps, and aerial imagery. Based on the close spatial concordance between these various sources, the data on which Figure 77-5 is based are considered of sufficient quality to eliminate the need for field mapping.

**Technical Area:** Land Use  
**Authors:** Amanda Stennick

## **BACKGROUND**

The applicant has stated in the Revised AFC (Table 5.4-5 and Appendix W), that the 473-acre project site is currently under a Williamson Act contract. For staff to completely evaluate the proposed project the following information is necessary.

## **DATA REQUEST**

- 144. *Please submit Kern County's proposed schedule for cancellation of the Williamson Act contract for the 473 acres.***

## **RESPONSE**

As discussed in Revised AFC Sections 5.4.1.6 and 5.4.7, Kern County is expected to provide tentative approval of the Williamson Act contract cancellation within 6 months of receiving the cancellation application submittal. The tentative approval of the Williamson Act contract cancellation from the Kern County Board of Supervisors would be sought before final certification by the CEC. It is anticipated that the Board of Supervisors would approve the contract cancellation subject to standard conditions such as payment of the applicable Williamson Act contract cancellation fee. These conditions would be satisfied by the Applicant prior to construction of the HECA Project in order for Kern County to issue final approval of the Williamson Act contract cancellation.

Please note that the parcels, or portions thereof, that are being removed from Williamson Act contracts extend slightly beyond the 473-acre Project Site, making the total cancelled area approximately 492 acres.



## **BACKGROUND**

Hydrogen Energy International, LLC (HEI) is also acquiring an additional 628 acres of land adjacent to the 473-acre project site, referred to as “Controlled Area” (Figure 2-4 in the Revised AFC). The 628 acres encompass Assessor’s Parcel Numbers 159-040-02, 159-040-04, 159-040-11, 159-040-16 [part], 159-040-18 [part], and 159-190-09. HEI states that it will own this property and have control over public access and future land use.

## **DATA REQUEST**

**145. Please state how the 628 acres will be used as part of the proposed project.**

## **RESPONSE**

As discussed in Revised AFC Section 5.4, Project components will be limited to the Project Site, except for the Project linears, which, as shown in Figure 5.4-2 of the Revised AFC, will extend across the 628-acre “Controlled Area.” As stated in Revised AFC Section 5.4.1.6, the primary purpose of the Controlled Area is to provide a buffer area between the Project Site and adjacent parcels. Current plans are to continue to use the Controlled Area for agricultural purposes. Potential land use impacts of the Project on the Project Site, Controlled Area, and study area are analyzed in Revised AFC Section 5.4.

## DATA REQUEST

- 146. Please state whether the 628 acres (or a portion thereof) are under a Williamson Act contract. If yes, please provide the information on the 628 acres as described in data request #135.**

## RESPONSE

The 628-acre Controlled Area is under Williamson Act contract, as presented on Figure 5.4-3 of the Revised AFC, except for parcel 159-040-11-001, which is the 1.23-acre area including and surrounding an irrigation canal to the south of the Project Site. Williamson Act contracts covering the Controlled Area are not proposed to be cancelled as part of the HECA Project and will be used for agricultural purposes, as stated in the response to Data Request 145.



## **BACKGROUND**

As stated in the AFC, HEI will obtain a lot line adjustment to merge the 473-acre project site (a portion of two legal parcels, Assessor's Parcel Numbers 159-040-16 [part] and 159-040-18 [part]), into one legal parcel and merge the remainder of Assessor's Parcel Number 159-040-16, which would be excluded from the project site into Assessor's Parcel Number 159-040-020.

## **DATA REQUEST**

- 147. *Please clarify whether a typographic error was made and APNs 159-040-020 and 159-040-02 are the same parcel.***

## **RESPONSE**

Assessor's Parcel Number 159-040-020, which is listed in the second paragraph on page 5.4-21 of the Revised AFC, is the same parcel as 159-040-02, as specified in the first paragraph of Section 5.4.1.6 on page 5.4-18 of the Revised AFC. Kern County interchangeably uses 8-digit and 9-digit parcel numbers.

## **DATA REQUEST**

**148. Please provide Kern County's schedule for processing the lot line adjustment applications.**

## **RESPONSE**

As discussed in Revised AFC Sections 5.4.1.6 and 5.4.7, Kern County is expected to complete administrative processing of the lot line adjustment application within 6 months of application submittal. This action would be completed prior to commencing construction of the HECA Project, in accordance with CEC requirements.



## DATA REQUEST

- 149. When available, please provide Energy Commission staff with a copy of the final recorded documents for the lot line adjustments.**

## RESPONSE

A copy of relevant final lot line adjustment documents will be provided to the CEC once they are recorded with the Kern County Assessor.

**Technical Area:** Public Health

**Author:** Dr. Alvin Greenberg

## **BACKGROUND**

Petroleum (pet) coke and coal are some of the most impure of fuels. Their impurities range from trace quantities of many metals, including uranium, thorium, and polonium, to much larger quantities of aluminum and iron to still larger quantities of impurities such as sulfur. The Application For Certification addresses the potential emissions of many substances released from the gasification of pet coke and coal but has not discussed the potential emissions of radioisotopes. Staff needs this information in order to fully address the potential for all impacts on public health.

## **DATA REQUEST**

**150. Please provide the identity of and emission factors for all radioisotopes that are potentially released when pet coke and coal are gasified.**

## **RESPONSE**

A literature search was conducted to determine the identities and quantities of radioisotopes that might be present in the petroleum coke and western bituminous coal to be gasified at HECA. This search revealed that data for these feedstocks and similar feedstocks are not available. While trace concentrations of radioisotopes may be found in coal and petcoke, the National Institute of Occupational Safety and Health (NIOSH) *Criteria for a Recommended Standard: Occupational Exposures in Coal Gasification Plants* (NIOSH, 1978) states that the radioactivity of coal is typically similar to that of sedimentary rocks. Trace amounts of radioisotopes are ubiquitous in nature. The NIOSH study found that no significant radiological exposure from coal gasification plants is anticipated.

In addition, because the Integrated Gasification Combined Cycle (IGCC) is a closed system, no significant radiological exposure is anticipated from the IGCC process

## **References**

NIOSH (National Institute of Occupational Safety and Health), 1978. *Criteria for a Recommended Standard: Occupational Exposures in Coal Gasification Plants*, September 1978, DHHS (NIOSH) Publication No. 78-191.



**Technical Area:** Socioeconomics

**Author:** Scott Debauche

## **BACKGROUND**

AFC Section 5.8 (Socioeconomics), page 5.8-15, states:

The nearest hospitals to the HECA project site are Mercy Southwest and HealthSouth Bakersfield, located approximately 21 miles northeast and 25 miles east of the site, respectively.

Due to the remote location of the proposed project site and based on these distances to the nearest available hospital facilities serving the HECA site, for the Socioeconomics Staff Assessment, Energy Commission staff needs additional information regarding the applicant's plans for first response emergency care during both project construction and operation. This information is required for staff to accurately assess impacts required by California Environmental Quality Act (CEQA) for the proposed project to maintain acceptable service ratios, response times, and other performance objectives for emergency medical providers serving the HECA site.

## **DATA REQUEST**

**151. Please provide information on the applicant's protocol for on-site first responder emergency medical care during both project construction and operation.**

## **RESPONSE**

The Applicant has previously responded to this question in the response to Set One, Data Request 93, in November 2009. The response has been provided below, for reference:

As described in Sections 2.6.1.4 and 2.7.2 of the Revised AFC, emergency response services will be coordinated with the local fire department, ambulance companies, and local hospitals and clinics—during both HECA Project construction and operation. Prior to commencement of construction activities, the Applicant, and the assigned contractors and operations and management staff, will meet and develop a site-specific construction emergency response program. A review of the developed program with local government emergency response organizations will ensure completeness and proper coordination.

During HECA Project construction, the Applicant's Engineering, Procurement, and Construction contractor will be responsible for providing site security, health and safety training, and site first aid services. First-aid kits will be conveniently located around the Project Site, and will be maintained regularly. At least one person trained in first aid will be part of the construction staff upon mobilization, and additional personnel with appropriate skills for site first aid and medical support (nurse and/or medical practitioner) will be added as the construction crew size increases. All foremen and supervisors will be required to have first-aid training.

Health, Safety, Security, and Environment goals aim to reduce the need for emergency medical care services by motivating workers to work safely and protect long-term health, as well as to identify hazards and manage risks on the Project Site. Emergency preparedness includes the development of a communications and response plan for emergency situations during HECA Project operation, including identification of area hospitals and clinics and coordination with local emergency response organizations in Bakersfield and elsewhere in Kern County.

If first aid is required for minor accidents or incidents on site during HECA Project construction or operation, it will be provided by the appropriately trained HECA Project personnel, if possible. For incidents requiring greater resources or medical attention, injured workers will be transferred to a designated local clinic for non-urgent care; for more serious or life-threatening situations, 911 will be called.

Kern County's Emergency Medical Services (EMS) Department is the lead agency for the EMS system in Kern County, and is the agency responsible for coordinating all system participants in the County, including fire departments, ambulance companies, hospitals, and other service providers. All 911 calls are routed to the County's Emergency Communications Center, where detailed EMS protocols and procedures are followed to dispatch fire trucks and ambulances, or in some circumstances, a medical evacuation helicopter service. For most medical emergency situations, both the closest fire station and the local ambulance company (Hall Ambulance Service in Bakersfield) would also be dispatched. Given average response times to the site, it is likely that the local fire department emergency medical technicians would arrive on the scene initially and provide first response services. Once the ambulance arrives, the Hall Ambulance Service paramedics would be the medical providers on the scene. They would provide advanced life support services as needed on site and during patient transport to an appropriate medical facility (Kern County, 2009; Searfoss, 2009).

## **References**

- Kern County, 2009. "County of Kern Emergency Medical Services Policies, Procedures, and Protocols." <http://www.co.kern.ca.us/ems/policy.asp>. Accessed October 13, 2009.
- Searfoss, Ed, 2009. Paramedic Supervisor, Hall Ambulance Service, Inc. Personal communication with Mara Feeney, Mara Feeney & Associates. October 13.



**Technical Area:** Traffic and Transportation

**Author:** Scott Debauche

## **BACKGROUND**

Title 14, Code of Federal Regulations, APrt 77.13 (2)(i) requires an Applicant to notify the Federal Aviation Administration (FAA) of the construction of structures with a height greater than 200 feet from grade. HECA AFC Section 5.10 (Transportation and Circulation), page 5.10-25, states:

The project's tallest structure is the carbon dioxide vent at 260 feet.

Energy Commission staff needs information regarding the applicant's completion of FAA Form 7460 and an applicant secured FAA Determination of No Hazard to Navigable Airspace. At the time staff has not been provided with a completed FAA Form 7460 or an applicant secured FAA Determination of No Hazard to Navigable Airspace. Therefore, staff cannot make a determination regarding LORS conformance with FAA requirements or the potential for project impacts related to the height of this structure and its location in navigable airspace. This information is necessary for staff's analysis.

## **DATA REQUEST**

**152. Please provide information on the applicant's status of a completion of the FAA 7460 requirements and attainment of an FAA Determination of No Hazard to Navigable Airspace.**

## **RESPONSE**

By the end of January 2010, The Applicant will provide to the Federal Aviation Administration (FAA), on FAA Form 7460-1, notification of the proposed construction of all structures with a height greater than 200 feet from grade. This notification will address any permanent project structures and any temporary construction equipment that would exceed 200 feet from grade. A copy of the FAA's determination will be provided to CEC staff for completion of their analysis. FAA notifications for construction equipment exceeding 200 feet in height (very large cranes, etc.) will be submitted at least at 30 days before the commencement of the specific construction activities requiring that equipment.



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA  
1516 NINTH STREET, SACRAMENTO, CA 95814  
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APPLICATION FOR CERTIFICATION  
FOR THE HYDROGEN ENERGY  
CALIFORNIA PROJECT

Docket No. 08-AFC-8

PROOF OF SERVICE LIST  
(Rev. 1/27/10)

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**DECLARATION OF SERVICE**

I, Catherine Short declare that on February 1, 2010, I served and filed copies of the attached Responses to CEC Data Requests Set Two (Nos. 133 through 152), dated January, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:  
**[[www.energy.ca.gov/sitingcases/hydrogen\\_energy](http://www.energy.ca.gov/sitingcases/hydrogen_energy)].**

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

**(Check all that Apply)**

**FOR SERVICE TO ALL OTHER PARTIES:**

           sent electronically to all email addresses on the Proof of Service list

  X   by personal delivery or by depositing in the United States mail at San Francisco, CA with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

**AND**

**FOR FILING WITH THE ENERGY COMMISSION:**

           sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

**OR**

  X   depositing in the mail an original as follows:

**CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. 08-AFC-8

1516 Ninth Street, MS-4

Sacramento, CA 95814-5512

[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

I declare under penalty of perjury that the foregoing is true and correct.

